ComfortReady HOME



Auxiliary Heat Explained

Minimize your heating bill by optimizing your heat pump

Your heat pump is designed to move heat from the air outside into your home, even in cold weather. However, when the temperature outdoors drops low enough, some heat pumps need a little extra help to keep your home comfortable. The temperature when this happens is called the balance point: below this point, your heat pump uses a backup heat source in the form of electric resistance elements or another fuel, such as natural gas, to keep your home warm.

Knowing when and why the backup heat comes on can help you understand and manage spikes in winter energy use.

Auxiliary (Supplemental) Heat

What it is: Auxiliary heat comes in the form of built-in, backup electric heating elements (think of a toaster's heating elements) or a gas furnace.

When it runs: It will start automatically when a defrost cycle is needed or when the heat pump needs help to maintain the indoor temperature. This usually happens on the coldest days of the year or when the thermostat setting is raised more than 2 degrees Fahrenheit.

Why it matters: Auxiliary heat uses 2–3 times more energy than the heat pump alone and can raise electricity use significantly, leading to higher bills.

Pro Tip

Keeping temperature changes (setbacks) within 2°F will limit how often the auxiliary heating comes on — saving you money.

Emergency Heat

What it is: Emergency heat is a backup-only mode that uses the same electric heating elements or your gas furnace without engaging the heat pump.

When it runs: This happens when the heat pump is locked out at a set outdoor temperature (which is set up during installation) or during extreme cold spells. It will also occur when the system experiences a failure or when “Emergency Heat” is manually selected on the thermostat.

What to know: Emergency heat draws much more electricity than other modes and should only run until the heat pump can be repaired or restarted. If the emergency heat comes on due to a cold spell, the heat pump will take over when the outdoor temperature rises.

How it All Works Together

Mild days with minimal or no temperature setback: The heat pump operates on its own with almost no engagement of the auxiliary system.

Very cold days or mild days with a thermostat setback of 3°F or more: The heat pump automatically engages auxiliary heating as necessary to achieve or maintain the thermostat set point.

Extreme cold or system failure: The heat pump may automatically trigger “Emergency Heat” until the weather warms up or the heat pump is repaired. Some systems need to be manually set to “Emergency Heat” during system failures.

Helpful Reminders

- Keeping a heat pump at a consistent temperature is the easiest way to ensure efficiency.
- Seeing “AUX Heat” on a thermostat is normal during winter operation.
- Avoid lowering the thermostat setpoint at night (best) or consider a modest 2°F setback for efficient operation of the heat pump.
- If you notice “Emergency Heat” on and it’s not cold outside, you may have a mechanical failure with your heat pump.
- Avoid using the “Away” feature on your heat pump.
- Some thermostats or settings must be programmed by an HVAC technician.
- Increased energy use during cold weather will appear on your bill up to a month after the spike occurs. By that time, the weather conditions may have changed.

Bonneville POWER ADMINISTRATION

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